REMARKS/ARGUMENTS

Objection to the disclosure

The paragraph referred to by the examiner has been amended to remove the unnecessary reference to a hyperlink.

Claim amendment

The claim amendment to claim 1 is supported in various places in the disclosure such as in the first full paragraph following the summary of the invention on page 3 of the disclosure.

Claims 1 and 14 have been rejected under 35 USC 102 as being anticipated by Zadrozny et al. Applicants respectfully traverse this rejection.

Zadronzny et al. deal with creating and revising grammar rules [col 3, lines 7-8]. Claim 1 deals with generating a database of inference rules. This is a completely different process. The grammar rules in Zadronzny et al. and the claimed inference rules have totally different forms and serve totally different purposes.

The grammar rule in Zadrozny et al. comprises a non-terminal followed by the "::=" symbol followed by one or more terminals or non-terminals or "|" symbols (denoting a logical OR) followed by a period. [col 2 lines 13-16]. A non-terminal is a symbol (any symbol can be replaced by a different string as long as the replacement is done to all of its occurrences and the replacement is not equal to any other symbol). The grammar rules are used to constrain the number of different sentences 510 that an utterance 125 might be recognized as. [col 1, lines 61-62]. Zadrozny et al generates a new grammar, and not a database of inference rules.

By contrast, in the claimed invention in claim 1, the inference rules relate paths formed by concatenated relationships between words in a text. There is no substitution or replacement of symbols to generate a new grammar rule as in Zadrozny et al. Rather the inference rules relate paths according to the similarity between the paths and the method generates a database

containing the inference rules. An inference rule determines which natural language expression means the same (or have a related meaning) as another natural language expression. For example, the rule "X solves Y" => "X finds a solution to Y" means that "X solves Y" means the same as "X finds a solution to Y". The term "inference rule" has an established meaning in the art and completely differentiates what is taught by Zadrozny et al. See for example the present disclosure, page 2, first full paragraph, page 3, second full paragraph, and the entirety of page 14.

Therefore, claims 1 and 14 do not claim exactly the same thing as disclosed by Zadrozny et al and are patentable.

Claims 2-19 are rejected under 35 USC 103(a) as being unpatentable over Zadrozny et al in view of Kendall et al. Applicants respectfully traverse this rejection.

First, since all of claims 2-19 depend on claim 1, this rejection should be set aside for the reasons given above in relation to claim 1.

In addition, in relation to claims 2 and 15: Merging non-terminals is totally different from computing the similarity between two paths. When two non-terminals are merged, (e.g., <N7>::= <N3> | <N4>;) [col 4, line 4], a new non-terminal is created that can generate the phrases in the union of the phrases generated by each individual non-terminals that are merged. No attempt is made in Zadrozny et al to generate a database of inference rules where the inference rules between pairs of paths are based on the frequency of occurrence of words in the paths.

In relation to claims 3 and 16: The rules in Kendall et al., as well as the rules in Zadronzny et al., specify which sentences are allowed by a speech recognition system. For example, the rule ("I want"|"I need")("food") allows the two sentences "I want food" and "I need food" and disallow any other sentence. [col 4, lines 16-20]. The inference rules in the claimed invention, on the other hand, specify a relationship between two natural language expressions (paths formed by concatenated relationships between words in the text).

In relation to claims 4 and 17: Merging non-terminals is totally different from computing path similarities. Further, Kendall et al. do not count the words, they merge two rules if they share some words (even if the word only occurred once). [col 15, lines 45-47]. In contrast, claims 4 and 17 require counting occurrences of words at the end points of specific paths.

In relation to claims 5 and 17: In merging processing Zadronzny et al. takes two rules such as <<START>>::= <N0> <N1> <N2> <N3> and <<START>>::= <N0> <N1> <N2> <N4> and merge them into a single rule: <<START>>::= <N0> <N1> <N2> <N7> What Zadrozny et al counts is totally different from what is counted as claimed. Zadrozny et al count the number of symbols in rules. In claims 5 and 17, the number of words in the text is counted.

In relation to claims 6 and 19: (Kendall et al.) do not use a similarity measure to determine whether two rules should be combined. They simply look at whether two rules used the same identical words at the beginning or the end of the two rules.

In relation to claims 7 and 8: Kendall et al makes a completely different kind of query. The question "what do you want for lunch" is a question posed by a system with speech recognition capability. The system then needs to be able to understand and interpret the user's response such as "I want hamburgers" or "I'd like hotdogs". In information retrieval, the questions are posed by the user. The system's task is to seek answers in a text collection. The present invention, unlike the voice recognition systems cited by the examiner, produces a database of inference rules that allows expansion of the search to find answers when similar but non-identical expressions are used. If the examiner has searched using a search engine such as Google, the examiner will know that the Google search engine, and similar search engines, do not use a database linking semantically equivalent expressions.

The remaining claims are allowable for the reasons already given.

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Examiner Shortledge, T.

Reconsideration and withdrawal of the rejections, and allowance of the claims, is respectfully requested.

Respectfully submitted, and certified as being faxed to the USPTO on Feb. 17/05.

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